



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,123	10/06/2006	Erik Sauar	P18290USPC	1316
29078	7590	04/02/2010	EXAMINER	
CHRISTIAN D. ABEL			CHAWAN, SHEELA C	
ONSAGERS AS				
POSTBOKS 6963 ST. OLAVS PLASS			ART UNIT	PAPER NUMBER
OSLO, N-0130				2624
NORWAY				
			NOTIFICATION DATE	DELIVERY MODE
			04/02/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

vest@onsagers.no
hilde.vestli@onsagers.no

Office Action Summary	Application No.	Applicant(s)	
	10/598,123	SAUAR ET AL.	
	Examiner	Art Unit	
	SHEELA C. CHAWAN	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 October 2006.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-21 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 18 August 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>9/12/06</u> .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 9/12/06, the information disclosure statement is being considered by the examiner.

Drawings

3. The Examiner has approved drawings filed on 10/9/03.

Claim Objections

4. Claims 1, 4, 9, 11, 14 and 20 is objected to because of the following informalities:

In claim 1, line 3, change "," to - - ; - - .

In claim 1, line 4, change "," to - - ; - - .

In claim 1, line 5, change "," to - - ; - - .

In claim 4, line 2, change "," to - - ; - - .

In claim 4, line 3, change "," to - - ; - - .

In claim 9 line 2, change "," to - - ; - - .

In claim 9, line 3, change "," to - - ; - - .

In claim 11, line 3, change "," to - - ; - - .

In claim 11, line 4, change "," to - - ; - - .

In claim 14, line 4, change "," to - - ; - - .

In claim 14, line 5, change "," to - - ; - - .

In claim 20, line 4, change “,” to - - ; - - .

Similarly all the claims need to be corrected .

Appropriate correction is required.

Specification

5. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

6. 112, 2nd Paragraph:

Products (e.g., machines and manufactures) must distinguish over the prior art in terms of their structure (or structure + structure's function when claimed functionally) rather than function alone (MPEP 2114). Therefore, an "apparatus" that has no structural limitations at all violates 112, 2nd paragraph, in that it fails to "particularly point out and distinctly claim ...".

112, 1st Paragraph – Single Means Claim:

A single claimed structural element that performs a multitude of functions, where the functions are disclosed as being performed by separate structural elements violates the 112, 1st paragraph enablement requirement. That is, a single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor (In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983)).

The same rationale (enablement) applies even when the claim is not in a "means plus function" format.

Therefore, I'd suggest (for your convenience) use of the following form paragraph to address both issues "at one fell swoop".

Form Paragraph:

Claim 15 is rejected under 35 U.S.C. 112 first and second paragraphs as attempting to define a product (i.e., machine or apparatus) entirely by virtue of its function, in the absence of any recited structure.

Products must distinguish over the prior art in terms of their structure (or structure + structure's function when claimed functionally) rather than function alone (MPEP 2114). Therefore, an "apparatus" not having structural limitations fails to

“particularly point out and distinctly claim ...” the invention in accordance with 35 U.S.C. 112, 2nd paragraph.

Furthermore, while the specification disclosure may be enabling for a plurality of structural elements performing the claimed functions [1], the specification does not reasonably provide enablement for a single structural element (or no structural elements) performing all of the claimed functions. That is, given the claim in question, the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims (“A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph” because a single means claim covers “every conceivable means for achieving the stated purpose” and “the specification disclosed at most only those means known to the inventor” - *MPEP, at paragraph 2164.08(a)*).

Applicant is advised to define the apparatus by virtue of the individual structural element that serve to perform the individual functions recited in the corresponding method claim.

[1] Even when an apparatus is disclosed as being computer implemented (e.g., software implemented on hardware), the requirement remains that there be some structure recited in the body of the claim (e.g., a processor and a memory storing a program which when implemented performs the method steps). For purposes of

“means plus function” language, individual disclosed steps corresponding to computer program elements operating on a processor (e.g., inputting, filtering, detecting and resolving) may be considered as separate means (*Dossel*, 115 F.3d at 946–47, 42 USPQ2d at 1885).

Claim Rejections - 35 USC § 112

7. Claims 1-21, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 4 “providing an image of the cell” as recited vague and unclear.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-10 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit¹, relying upon Supreme Court precedent², has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*,

¹ *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590²). While the instant claim(s) recite a series of steps or acts to be performed, the recited steps of “ **providing an image of the wafer, providing an image of the cell, comparining the wafer image to the cell image, upon match between a cell image and a wafer image, assigning the current cell to the current wafer**” the claim(s) neither transform an article nor positively tie to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 21, are rejected under 35 U.S.C. 102(b) as being anticipated by Hopper (US. 6,140,140).

As to claim 1, Hopper discloses method for establishing correspondence between' wafers and solar cells produced from said wafers (abstract), comprising, for each wafer and each solar cell,

² *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

- a) providing an image of the wafer (fig 4, 410 camera and wafer 100),
- b) providing an image of the cell (fig 4, 410, camera and cell image 108 a and 108 b),
- c) comparing (fig 4, image analyzer) the wafer image to the cell image (column 3, lines 56 - 65, column 5, lines 33 - 67, column 6, lines 1- 67),
- d) upon match between a cell image and a wafer image, assigning the current cell to the current wafer (column 3, lines 56 - 65, column 5, lines 33 - 67, column 6, lines 1- 67).

As to claims 2 and 12, Hopper discloses method according to claim 1, characterized in that at step a) and b) comprise depicting the crystallographic structure of the wafer and the cell (note fig 1, element 104 is crystallographic structure) and step c) comprises comparing the crystallographic structure of the wafer and the cell to one another (column 3, lines 56 - 65, column 5, lines 33- 67, column 6, lines 1- 67).

As to claims 3 and 13, Hopper discloses method according to any of the preceding claims, comprising assigning wafer identification data to the corresponding cell (fig 4, 410, camera and cell image 108 a and 108 b, (column 3, lines 56 - 65, column 5, lines 33 - 67, column 6, lines 1- 67).

As to claims 4 and 14, Hopper discloses method according to any of the preceding claims, comprising:

assigning inspection data to each cell, assigning a wafer position to each wafer, and upon match between a cell image and a wafer image, assigning cell inspection data to said wafer position in the ingot (column 5, lines 44- 67).

As to claims 5 and 15, Hopper discloses method according to claim 4, wherein When no match between a wafer image and a cell image is found, assign "breakage" as inspection data for that wafer position (column 3, lines 56 - 65, column 5, lines 33 - 67, column 6, lines 1- 67, column 8, lines 17- 22).

As to claims 6 and 16, Hopper discloses method according to claim 4, comprising: adjusting ingot and/or wafer production parameters based on cell inspection data (column 6, lines 38- 55).

As to claims 7 and 18, Hopper discloses method according to claim 1, wherein the images are provided by means of at least one CCD camera, a CMOS camera, a digital camera or an IR depicting system (fig 4, element 410).

As to claims 8 and 19, Hopper discloses method according to any of the preceding claims, comprising storing the wafer image and the cell image in a memory before and/or after assigning the current cell to the current wafer (column 1, lines 12- 39, column 2, lines 40- 51, column 3, lines 1- 6).

As to claims 9, 20 and 21, Hopper discloses method according to claim 1, comprising: providing ingot position data and/or manufacturing history for each wafer, providing inspection data for each cell, - upon match between a cell image and a wafer image, assigning the current cell's inspection data to the current wafer position in the ingot and/or the manufacturing history of the wafer (column 4, lines 20-38, column 8, lines 17-33).

Regarding claim 10, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 9.

Regarding claim 11, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

Regarding claim 14, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

Regarding claim 17, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

Regarding claim 20, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

Other prior art cited

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McRee et al., (US. 7,144,457 B1) discloses method and device for analyzing crystalline content of precipitates and crystal without isolation.

Madoyski (US. 6,482, 661B1) discloses method of tracking wafers from ingot.

Maayah et al., (US. 7,065,239B2) discloses automated repetitive array microstructure defect inspection.

Sopori et al., (US. 5,757,474) discloses system for characterizing semiconductor materials and photovoltaic devices through calibration.

Chang et al., (US. 5,716,459) discloses monolithically integrated solar cell microarray and fabrication method.

Lindmayer (US.4,256,681) discloses method of producing semi crystalline silicon.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Friday 8.30 am - 5.00 pm and every Wednesday work from home. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sheela C Chawan/

3/27/10

Primary Examiner, Art Unit 2624

Application/Control Number: 10/598,123
Art Unit: 2624

Page 12